Appendix A
Final CHART Assessment for the California Coastal (CC) Chinook ESU

ESU Description

The CC chinook ESU was listed as a threatened species in 1999 (64 FR 50394). Following completion of an updated status review (NMFS 2003a) and review of hatchery populations located within the range of the ESU (NMFS 2003b), NMFS proposed that the ESU remain listed as a threatened species and that seven hatchery populations be included as part of the ESU (69 FR 33102; June 14, 2004). On June 28, 2005, NMFS finalized this proposed listing determination (70 FR 37160). The ESU includes all naturally spawned populations of chinook salmon in rivers and streams from immediately south of Klamath River to, and including, the Russian River, as well as the seven small hatchery populations. Major watersheds occupied by this ESU include Redwood Creek, Mad River, Eel River, several smaller coastal watersheds, and the Russian River. A Technical Recovery Team has developed a preliminary model of the historic and extant population structure of this ESU. Additional technical recovery planning work is underway that will identify viability criteria for independent populations and the ESU as a whole.

CHART Area Assessments

The preliminary CHART assessment for this ESU (NMFS 2004b) was prepared in support of our December 10, 2004 critical habitat proposal (69 FR 71880). This final CHART assessment considered new information received during the public comment period regarding fish distribution, habitat use, and the conservation value of occupied habitat areas. Based on information from timber landowners on the north coast, minor changes in fish distribution were made by the CHART in four watersheds (110810, 110820, 110920, and 110930). These changes in distribution did not result in any changes in the occupancy or conservation value of Hydrologic Subarea HSA within the freshwater and estuarine range of this ESU.

The final CHART assessment for the CC chinook ESU addressed 45 occupied CALWATER HSAs which are nested in 8 CALWATER Hydrologic Units (HUs) or subbasins (Figures A1 and A2). The HSAs were chosen as freshwater critical habitat units because they present a convenient and systematic way to organize the CHART's

watershed assessments for this ESU. In addition to the 45 HSA watershed units, conservation assessments were made for Humboldt Bay and the Eel River Estuary. Information presented below for HUs within the range of this ESU (size, counties, total stream miles, occupied stream miles, and habitat use) were generated from GIS data sets compiled by NMFS Southwest Region and can be found in Table A1.

Unit 1. Redwood Creek Subbasin (HU 1107)

The Redwood Creek HU is located in the northern portion of the ESU and includes the Redwood Creek drainage. The HU encompasses approximately 294 mi^2 and occurs completely within Humboldt County. The HU contains 3 HSAs, all of which are occupied, and 343 stream miles (at 1:100,000 hydrography). Fish distribution and habitat use data compiled by NMFS biologists identify approximately 107 miles of occupied riverine and estuarine habitat in the occupied HSAs (Table A1). The CHART concluded that these occupied riverine and estuarine areas contained one or more PCEs (i.e. spawning, rearing, or migratory habitat) and identified several management activities that may affect the PCEs. Table A2 summarizes the total miles of occupied riverine/estuarine habitat for each HSA watershed that contains spawning/rearing, rearing/migration, or migration PCEs, as well as management activities that may affect the PCEs in each HSA. Map A1 depicts the specific areas in this HU that are occupied by the ESU and were considered for critical habitat designation. The team did not identify any unoccupied habitat in this subbasin that may be essential for the conservation of the ESU.

Unit 2. Trinidad Subbasin (HU 1108)

The Trinidad HU is located in the northern portion of the ESU and includes Big Lagoon and Little River. The HU encompasses approximately 131 mi^2 and occurs completely within Humboldt County. This HU contains 2 HSAs, both of which are occupied, and 161 stream miles (at 1:100,000 hydrography). Fish distribution and habitat use data compiled by NMFS biologists identify approximately 27miles of occupied riverine/estuarine habitat in the 2 occupied HSAs (Table A1). The CHART concluded that these occupied areas contained one or more PCEs (i.e. spawning, rearing, or migratory habitat) and identified management activities that may affect the PCEs. Table A2 summarizes the total miles of occupied riverine and/or estuarine habitat identified for each HSA watershed that contains spawning/rearing, rearing/migration, or migration PCEs, as well as management activities that may affect the PCEs in each HSA. Map A2 depicts the specific areas in this HU that are occupied by the ESU and were considered for critical habitat designation. The team did not identify any unoccupied habitat in this

subbasin that may be essential for the conservation of the ESU.

Unit 3. Mad River Subbasin (HU 1109)

The Mad River HU is located in the northern portion of the ESU and includes the Mad River drainage. The HU encompasses approximately 499 mi^2 and occurs in portions of Humboldt and Trinity Counties. This HU contains 4 HSAs, 3 of which are occupied, and a total of 661 miles of streams (at 1:100,000 hydrography). Fish distribution and habitat use data compiled by NMFS biologists identify approximately 53 miles of occupied riverine/estuarine habitat in the 3 occupied HSAs (Table A1). The CHART concluded that these occupied areas contained one or more PCEs (i.e. spawning, rearing, or migratory habitat) and identified management activities that may affect the PCEs. Table A2 summarizes the total miles of occupied riverine and/or estuarine habitat identified for each HSA watershed that contain spawning/rearing, rearing/migration, or migration PCEs, as well as management activities that may affect the PCEs in each HSA. Map A3 depicts the specific areas in this HU that are occupied by the ESU and under consideration for critical habitat designation. The team did not identify any unoccupied habitat in this subbasin that may be essential for the conservation of the ESU.

Unit 4. Eureka Plain Subbasin (HU 1110)

The Eureka Plain HU is located in the vicinity of Eureka and surrounds Humboldt Bay. The HU encompasses approximately 224 mi^2 and occurs completely within Humboldt County. This HU contains a single HSA which is occupied and a total of 269 miles of streams (at 1:100,000 hydrography). Fish distribution and habitat use data compiled by NMFS biologists identify approximately 72 miles of occupied riverine and/or estuarine habitat in the occupied HSA (Table A1). The CHART concluded that these occupied areas contained one or more PCEs (i.e. spawning, rearing, or migratory habitat) for this ESU and identified management activities that may affect the PCEs. The CHART also evaluated Humboldt Bay into which most of the freshwater stream in this subbasin drain as a separate habitat unit. Humboldt Bay contains approximately 25 mi^2 of estuarine habitat which the CHART found contained PCEs for rearing and migration and was of high conservation value. Table A2 summarizes the total miles of occupied riverine and/or estuarine habitat in the HSA that contain spawning/rearing, rearing/migration, or migration PCEs, as well as management activities that may affect the PCEs in each HSA. Map A4 depicts the specific areas in this HU that are occupied by the ESU and were considered for critical habitat designation. The team did not identify any unoccupied habitat in this subbasin that may be essential for the conservation of the ESU.

Unit 5. Eel River Subbasin HU (1111)

The Eel River HU is located in north central portion of the ESU and includes the Eel River and Van Duzen River drainages. The HU encompasses approximately 3,682 mi^2 and occurs in portions of several counties including: Humboldt, Trinity, Mendocino, Lake, Glenn, Colusa, and Tehama. This HU, which is the largest in this ESU, contains 19 occupied HSAs and 5,194 miles of streams (at 1:100,000 hydrography). Fish distribution and habitat use data compiled by NMFS biologists identify approximately 833 miles of occupied riverine and/or estuarine habitat in the occupied HSAs (Table A1). The CHART concluded that these occupied areas contained one or more PCEs (i.e. spawning, rearing, or migratory habitat) for this ESU and identified management activities that may affect the PCEs. Table A2 summarizes the total miles of occupied riverine and/or estuarine habitat identified for each HSA watershed that contain spawning/rearing, rearing/migration, or migration PCEs, as well as management activities that may affect the PCEs in each HSA. Map A5 depicts the specific areas in this HU that are occupied by the ESU and were considered for critical habitat designation. The team did not identify any unoccupied habitat in this subbasin that may be essential for the conservation of the ESU.

Unit 6. Cape Mendocino Subbasin (HU 1112)

The Cape Mendocino HU is located in the central portion of the ESU and includes the Bear River and Mattole River drainages. This HU encompasses approximately 499 mi^2 and occurs almost entirely in Humboldt County. This HU contains 3 HSAs, 2 of which are occupied, and 654 miles of streams (at 1:100,000 hydrography). Fish distribution and habitat use data compiled by NMFS biologists identify approximately 172 miles of occupied riverine and/or estuarine habitat in the 2 occupied HSAs (Table A1). The CHART concluded that these occupied areas contained one or more PCEs (i.e. spawning, rearing, or migratory habitat) for this ESU and identified management activities that may affect the PCEs. Table A2 summarizes the total miles of occupied riverine and/or estuarine habitat identified for each HSA watershed that contain spawning/rearing, rearing/migration, or migration PCEs, as well as management activities that may affect the PCEs in each HSA. Map A6 depicts the specific areas in this HU that are occupied by the ESU and were considered for critical habitat designation. The team did not identify any unoccupied habitat in this subbasin that may be essential for the conservation of the ESU.

Unit 7. Mendocino Coast Subbasin (HU 1112)

The Mendocino HU is located in the southern portion of the ESU in portions of Humboldt and Mendocino Counties and includes several smaller streams including the Ten Mile, Noyo, Albion, Navarro, and Garcia Rivers. This HU which encompasses approximately 1,599 mi^2 contains 18 HSAs, 7 of which are occupied, and 2,103 miles of streams (at 1:100,000 hydrography). Fish distribution and habitat use data compiled by NMFS biologists identify approximately 209 miles of occupied riverine and/or estuarine habitat in the 7 occupied HSAs (Table A1). The CHART concluded that these occupied areas contained one or more PCEs (i.e. spawning, rearing, or migratory habitat) for this ESU and identified management activities that may affect the PCEs. Table A2 summarizes the total miles of occupied riverine and estuarine habitat identified for each HSA watershed that contain spawning/rearing, rearing/migration, or migration PCEs, as well as management activities that may affect the PCEs in each HSA. Map A7 depicts the specific areas in this HU that are occupied by the ESU and were considered for the critical habitat designation. The team did not identify any unoccupied habitat in this subbasin that may be essential for the conservation of the ESU.

Unit 8. Russian River Subbasin (HU 1114)

The Russian River HU is located in Mendocino and Sonoma Counties in the southernmost portion of the ESU and includes the Russian River drainage and its tributaries. The HU encompasses approximately 1,482 mi^2 and 1,872 miles of streams (at 1:100,000 hydrography). The HU contains 11 HSAs with 10 in the range of the ESU, and 8 of which are occupied. Fish distribution and habitat use data compiled by NMFS biologists identify approximately 160 miles of occupied riverine/estuarine habitat in the 9 occupied HSAs (Table A1). The CHART concluded these occupied areas contained one or more PCEs (i.e. spawning, rearing, or migratory habitat) for this ESU and identified management activities that may affect the PCEs. Table A2 summarizes the total miles of occupied riverine and estuarine habitat identified for each HSA watershed that contain spawning/rearing, rearing/migration, or migration PCEs, as well as management activities that may affect the PCEs in each HSA. Map A8 depicts the specific areas in this HU that are occupied by the ESU and were considered for critical habitat designation. The team did not identify any unoccupied habitat in this subbasin that may be essential for the conservation of the ESU.

CHART Conservation Value Rating

Freshwater/Estuarine Areas

After reviewing the best available scientific data regarding the distribution and habitat use for the CC chinook ESU, the CHART concluded that most of the occupied HSAs were of high or medium conservation value to the ESU. Of the 45 occupied HSAs that were evaluated, 27 were rated as having high conservation value, 10 were rated as having medium conservation value, and 8 were rated as having low conservation value. In addition, Humboldt Bay and the Eel River Estuary were also rated as having a high conservation value. Table A3 summarizes the CHART's PCE/watershed scores and preliminary conservation value ratings of low, medium or high for each watershed. Figure A9 depicts the spatial distribution of conservation ratings for the occupied HSAs within the range of the ESU.

Marine Areas

NMFS determined that marine areas did not warrant consideration as critical habitat for this ESU.

References and Sources of Information

NMFS 2003a. Updated Status of Federally Listed ESUs of West Coast Salmon and Steelhead. West Coast Salmon Biological Review Team; Northwest Fisheries Science Center and Southwest Fisheries Science Center. July 2003.

NMFS 2003b. Hatchery Broodstock Summaries and Assessments for Chum, Coho, and Chinook Salmon and Steelhead Stocks within ESUs listed under the ESA. Salmon and Steelhead Hatchery Assessment Group/NMFS; Northwest Fisheries Science Center and Southwest Fisheries Science Center.

NMFS 2004b. Draft Findings of NMFS' Critical Habitat Development and Review Teams (CHARTs) for 7 Salmon and O. mykiss ESUs in California. Main Report and 7 appendices. Prepared by NMFS Southwest Region.

Federal Register Notices

64 FR 50394 - California Coastal Chinook listing determination

69 FR 33102 - Proposed Listing Determinations for 27 West Coast Salmon and Steelhead ESUs

69 FR 71880 - Proposed Critical Habitat Designations for 7 Salmon and Steelhead ESUs in California

70 FR 37160 - Final Listing Determinations for 16 ESUs of West Coast Salmon and Final 4(d) Protective Regulations for Threatened Salmonid ESUs

Table A1. California Coastal Chinook ESU: Occupancy, habitat use and area information by Hydrologic Unit and Hydrologic Subarea

HU NUMBER	HU NAME	Major Stream / Watershed in HU	HU Occupied (Y or N)	Acres in HU	Square Miles in HU	Stream Miles (1:100k) in HU	Occupied Stream Miles	Occupied Stream Miles (Spawning)	Occupied Stream Miles (Rearing)	Occupied Stream Miles (Migration)	County HU Falls within	Acres of County in HU	Square Miles of County in HU	Percent of HU by County	HSA NUMBER	HSA NAME	HSA Occupied (Y or N)	Acres in HSA	Square Miles in HSA	Stream Miles (1:100k) in the HSA
1107	Redwood Creek	Redwood Creek	Y	187,972	294	343	107	101	107	107	Humboldt	187,972	294	100%						
															110710	Orick	Y	75,374	118	139
															110720	Beaver	Y	69,135	108	121
															110730	Lake Prairie	Y	43,463	68	94
1108	Trinidad	Maple Creek-Little River	Y	83,640	131	161	27	27	27	27	Humboldt	83,640	131	100%						
															110810	Big Lagoon	Y	53,709	84	105
															110820	Little River	Y	29,931	47	56
1109	Mad River	Mad River	Y	319,477	499	661	53	53	53	53	Humboldt	217,897	341	68%						
											Trinity	101,580	159	32%	110910	Blue Lake	Y	37,137	58	85
															110920	North Fork Mad River	Y	30,042	47	65
															110930	Butler Valley	Y	160,363	251	346
															110940	Ruth	N	91,934	144	165
1110	Eureka Plain	Jacoby-Freshwater Elk River-Salmon-Humboldt Bay	Y	143,143	224	269	72	71	72	72	Humboldt	143,143	224	100%	111000	Eureka Plain	Y	143,143	224	269
1111	Eel River	Eel River-Van Duzen	Y	2,355,818	3682	5,194	833	753	743	795	Humboldt	765,835	1197	33%						
											Trinity	316,869	495	13%	111111	Ferndale	Y	92,968	145	202
											Mendocino	1,030,069	1610	44%	111112	Scotia	Y	44,094	69	86
											Lake	189,191	296	8%	111113	Larabee Creek	Y	56,338	88	129
											Glenn	53,779	84	2%	111121	Hydesville	Y	25,319	40	66
											Colusa	45	0	0%	111122	Bridgeville	Y	162,917	255	352
											Tehama	30	0	0%	111123	Yager Creek	Y	84,554	132	169
															111131	Weott	Y	95,234	149	195
															111132	Benbow	Y	264,408	413	565
															111133	Laytonville	Y	80,851	126	176
															111141	Sequoia	Y	120,122	188	240
															111142	Spy Rock	Y	213,922	334	418
															111150	North Fork Eel River	Y	180,319	282	380
															111161	Outlet Creek	Y	102,051	160	248
															111162	Tomki Creek	Y	127,908	200	253
															111163*	Lake Pillsbury	Y	223,107	349	653
															111171	Eden Valley	Y	164,031	256	362
															111172	Round Valley	Y	83,406	130	199
															111173	Black Butte River	Y	102,890	161	249
															111174	Wilderness	Y	131,377	205	253
1112	Cape Mendocino	Bear River Mattole River	Y	319,484	499	654	172	152	168	150	Humboldt	311,733	487	98%						
											Mendocino	7,751	12	2%	111210	Oil Creek	N	14,740	23	29
															111220	Capetown	Y	66,269	104	120
															111230	Mattole River	Y	238,476	373	505
1113	Mendocino Coast	Ten Mile-Noyo_big Albion-Navarro-Garcia	Y	1,022,913	1599	2,103	209	184	133	209	Mendocino	850,622	1330	83%						
											Sonoma	172,291	269	17%	111311	Usal Creek	N	26,825	42	52
															111312	Wages Creek	Y	37,669	59	67
															111313	Ten Mile River	Y	82,479	129	163
															111320	Noyo River	Y	105,964	166	205
															111330	Big River	Y	128,899	201	265
															111340	Albion River	Y	43,762	68	92
															111350	Navarro River	Y	201,945	316	414
															111361	Greenwood Creek	N	20,286	32	42
															111362	Elk Creek	N	18,069	28	44
															111363	Alder Creek	N	27,898	44	63
															111364	Brush Creek	N	11,372	18	22
															111370	Garcia River	Y	95,445	149	208
															111381	North Fork Gualala River	N	30,636	48	66
															111382	Rockpile Creek	N	22,389	35	42
															111383	Buckeye Creek	N	25,768	40	55
															111384	Wheatfield Fork	N	71,443	112	162
															111385	Gualala	N	62,248	97	128
															111390	Russian Gulch	N	9,817	15	15
1114	Russian River	Russian River	Y	948,105	1482	1,872	160	133	151	160	Mendocino	356,145	557	38%						
											Sonoma	587,992	919	62%	111411	Guerneville	Y	104,509	163	195
											Lake	3,560	6	0%	111412	Austin Creek	Y	39,834	62	81
											Napa	408	1	0%	111421	Laguna	N	55,404	87	93
															111422	Santa Rosa	Y	49,766	78	78
															111423	Mark West	Y	52,924	83	92
															111424	Warm Springs	Y	139,422	218	277
															111425	Geyserville	Y	132,891	208	226
															111426	Sulphur Creek	N	52,630	82	87
															111431	Ukiah	Y	200,336	313	457
															111432**	Coyote Valley	N	67,068	105	161
															111433	Forsythe Creek	Y	53,321	83	124

*111163 Is bisected by the ESU Boundary (Scott Dam). 46,517 acres (73 square miles) lie within the ESU, 106 stream miles lie within the ESU.

**111432 Is outside the ESU Boundary (Coyote Dam) although it is inside the HU Boundary

Table A2. Summary of Occupied Subbasins/Watersheds, PCE's and Management Activities Affecting PCE's for the California Coastal Chinook ESU

Map Code	Basin	Watershed	HSA Unit	Spawning/Rearing PCEs (mi)**	Rearing/Migration PCEs (mi)**	Presence/Migration Only PCEs (mi)**	Management Activities***
	Redwood Creek	Orick	110710	59	59	59	FR, FC, GM, WI, GR
	Redwood Creek	Beaver	110720	31	31	31	FR
	Redwood Creek	Lake Prairie	110730	17	17	17	FR, WI
	Trindad	Big Lagoon	110810	8	8	8	FR, NW
	Trindad	Little River-Albion-Big Salmon	110820	18	18	18	FR, AG, GR, WI, NW
	Mad River	Blue Lake	110910	21	21	21	
	Mad River	North Fork Mad River	110920	3	3	3	FR, AG, GR, WI
	Mad River	Butler Valley	110930	30	29	29	FR, AG, GR, SC
	Mad River	Ruth	110940				
	Eureka Plain	Eureka Plain	111000	72	72	72	UR, FC, RB, TR
	Eel River	Ferndale	111111	40	40	40	AG, FC, GM
	Eel River	Scotia	111112	28	28	28	GM, FR, ES
	Eel River	Larabee Creek	111113	9	9	9	AG, FR, WI
	Eel River	Hydesville	111121	21	21	21	FR, GM, ES, WI
	Eel River	Bridgevelle	111122	27	27	27	FR, ES
	Eel River	Yager Creke	111123	27	27	23	FR, AG, GR, ES
	Eel River	Weott	111131	48	48	48	FR, ES, WI
	Eel River	Benbow	111132	182	182	182	FR, UR, ES, WI
	Eel River	Laytonville	111133	60	60	60	FR, UR, ES, NW
	Eel River	Sequoia	111141	54	54	54	FR, UR, NH
	Eel River	Spy Rock	111142	69	69	69	AG, FR, ES, NH
	Eel River	North Fork Eel River	111150	4	4	4	AG, GR, WI, ES, PO
	Eel River	Outlet Creek	111161	60	41	45	UR, FR, WI, NW
	Eel River	Tomki Creek	111162	75	75	75	FR, WI, NW
	Eel River	Lake Pillsbury	111163	12	12	12	ES, NH, NW
	Eel River	Eden Valley	111171	40	36	36	FR, GR, WI
	Eel River	Round Valley	111172	31	33	33	AG, FR, WI
	Eel River	Black Butte River	111173	24	24	24	FR, GR, WI
	Eel River	Wilderness	111174	7	7	7	FR, PO
	Cape Mendocino	Oil Creek	111210				
	Cape Mendocino	Capetown	111220	30	30	30	AG, GR, FR, WI
	Cape Mendocino	Mattole River	111230	142	142	121	FR, AG, GR, WI
	Mendocino Coast	Usal Creek	111311				
	Mendocino Coast	Wages Creek	111312	5	5	5	FR
	Mendocino Coast	Ten Mile River	111313	49	49	49	FR, GR, PO
	Mendocino Coast	Noyo River	111320	30	41	41	FR, UR, NW
	Mendocino Coast	Big River	111330	35	35	35	FR, PO, WL
	Mendocino Coast	Albion River	111340	13	13	13	FR, UR, NW
	Mendocino Coast	Navarro River	111350	42	42	42	AG, WI, RB, GR
	Mendocino Coast	Greenwood Creek	111361				
	Mendocino Coast	Elk Creek	111362				
	Mendocino Coast	Alder Creek	111363				
	Mendocino Coast	Brush Creek	111364				
	Mendocino Coast	Garcia River	111370	24	25	25	FR, AG, WI
	Mendocino Coast	North Fork Gualala River	111381				

Map Code	Basin	Watershed	HSA Unit	Spawning/Rearing PCEs (mi)**	Rearing/Migration PCEs (mi)**	Presence/Migration Only PCEs (mi)**	Management Activities***
	Mendocino Coast	Rockpile Creek	111382				
	Mendocino Coast	Buckeye Creek	111383				
	Mendocino Coast	Wheatfield Fork	111384				
	Mendocino Coast	Gualala	111385				
	Mendocino Coast	Russian Gulch	111390				
	Russian River	Guerneville	111411	43	43	43	UR, FR, NW
	Russian River	Austin Creek	111412	3	3	3	UR, GR, NW
	Russian River	Laguna	111421				
	Russian River	Santa Rosa	111422	10	10	10	UR, AG, NW
	Russian River	Mark West	111423	4	4	4	UR, FC, AG , WI
	Russian River	Warm Springs	111424	14	14	14	AG, UR, WI
	Russian River	Geyserville	111425	36	36	36	AG, GM, GR, UR
	Russian River	Sulphur Creek	111426				
	Russian River	Ukiah	111431	36	36	36	UR, AG, FC, GM, NH
	Russian River	Forsythe Creek	111433	15	15	15	AG, FR, GR

*Total Stream Miles calculated from blueline streams represented on 1:100,000 USGS Topographic Maps

**Overlap of stream miles may occur betweeen the three habitat types.

***Management Activities Codes:

AG - Agriculture
CM - Channel Modification
ES - Exotic / Invasive Species
FC - Flood Control Channel
FR - Forestry
GM - Sand and Gravel Mining
GR - Grazing
HD - Hydroelectric Dam
NH - Non-hydro Dam
NW - Non-agriculture Withdrawls / Impoundments
PO - Poaching
RB - Road Building / Maintenance
SP Septic System Failure / Containation
TR - River, Estuary, Ocean Traffic
UR - Urbanization
WI - Agriculture Withdrawls / Impoundments
WL - Wetland Loss / Removal

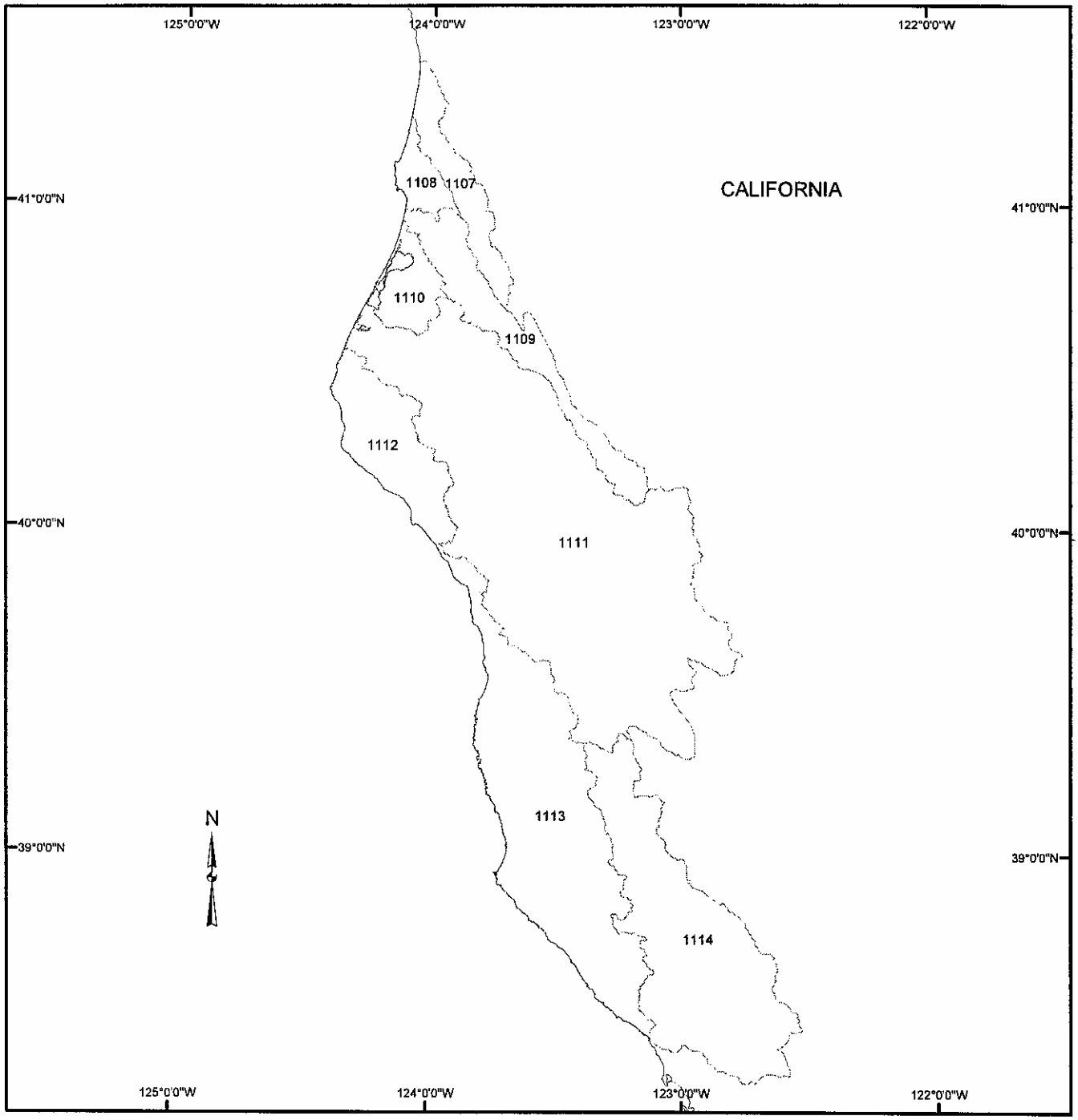
Table A3. Summary of Scores and Overall Rankings of Conservation Values for Critical Habitat for HSA watersheds occupied by the California Coastal Chinook ESU

Map Code	Basin	Watershed	Calwater Unit	Total Score (0-18)	Comments / Other Considerations	Conservation Value
	Redwood Creek	Orick	110710	14		High
	Redwood Creek	Beaver	110720	13		High
	Redwood Creek	Lake Prairie	110730	11		Medium
	Trindad	Big Lagoon	110810	9		Low
	Trindad	Little River-Albion_Big Salmon	110820	13		High
	Mad River	Blue Lake	110910	14		High
	Mad River	North Fork Mad River	110920	12		High
	Mad River	Butler Valley	110930	11		High
	Mad River	Ruth	110940	0		Not Occupied
	Eureka Plain	Eureka Plain	111000	13		High
	Eel River	Ferndale	111111	11		Medium
	Eel River	Scotia	111112	11		Medium
	Eel River	Larabee Creek	111113	10		Medium
	Eel River	Hydesville	111121	14		High
	Eel River	Bridgevelle	111122	9		Low
	Eel River	Yager Creke	111123	12		High
	Eel River	Weott	111131	13		High
	Eel River	Benbow	111132	14		High
	Eel River	Laytonville	111133	14		High
	Eel River	Sequoia	111141	13		High
	Eel River	Spy Rock	111142	12		High
	Eel River	North Fork Eel River	111150	13		High
	Eel River	Outlet Creek	111161	15		High
	Eel River	Tomki Creek	111162	13		High
	Eel River	Lake Pillsbury	111163	12		High
	Eel River	Eden Valley	111171	10		Medium
	Eel River	Round Valley	111172	12		High
	Eel River	Black Butte River	111173	9		Low
	Eel River	Wilderness	111174	8		Low
	Cape Mendocino	Oil Creek	111210	0		Not Occupied
	Cape Mendocino	Capetown	111220	12		High
	Cape Mendocino	Mattole River	111230	15		High
	Mendocino Coast	Usal Creek	111311	0		Not Occupied
	Mendocino Coast	Wages Creek	111312	7		Low
	Mendocino Coast	Ten Mile River	111313	13		High
	Mendocino Coast	Noyo River	111320	11		Medium
	Mendocino Coast	Big River	111330	11		Medium

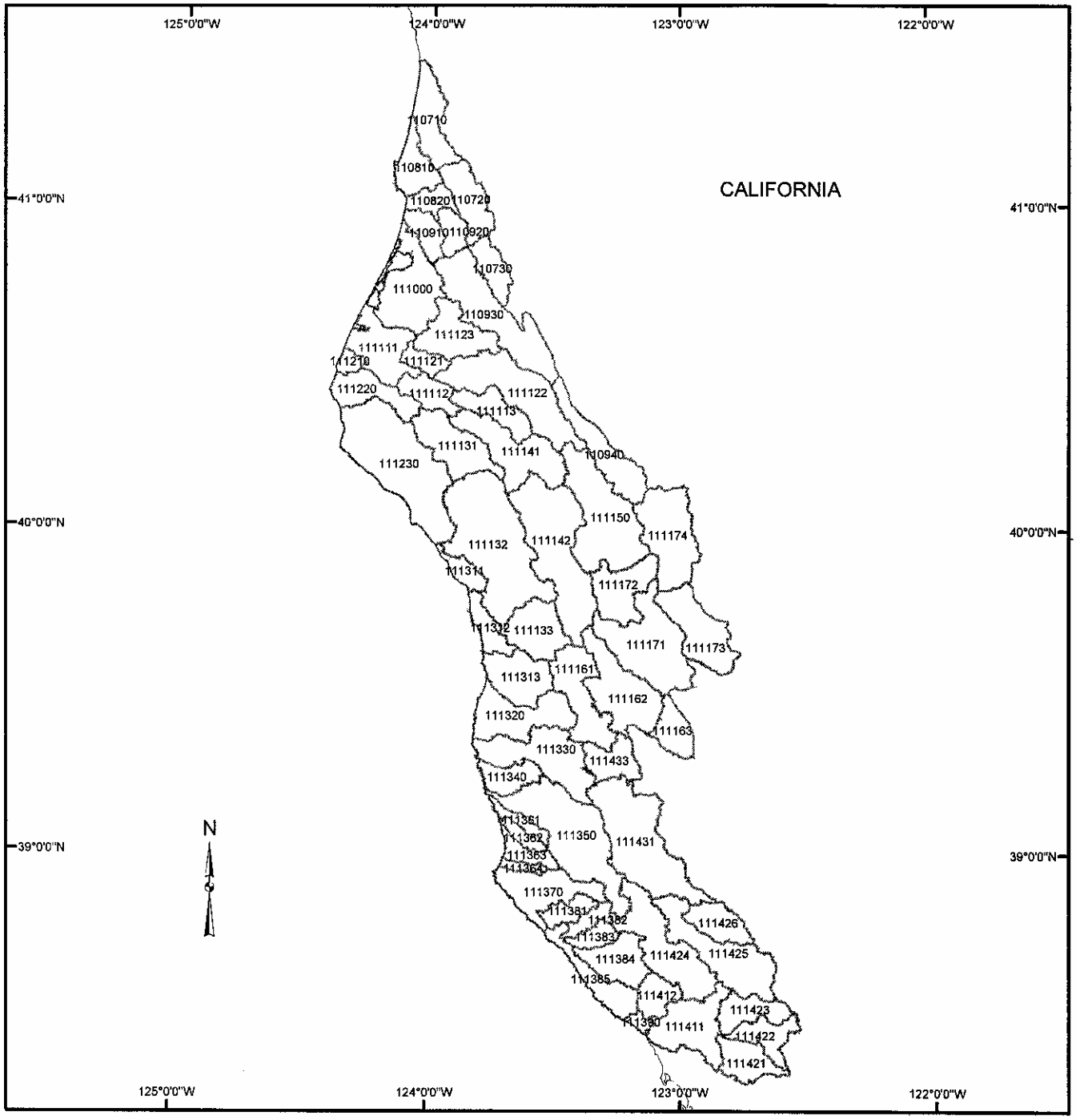
	Mendocino Coast	Albion River	111340	10		Medium
	Mendocino Coast	Navarro River	111350	7		Low
	Mendocino Coast	Greenwood Creek	111361	0		Not Occupied
	Mendocino Coast	Elk Creek	111362	0		Not Occupied
	Mendocino Coast	Alder Creek	111363	0		Not Occupied
	Mendocino Coast	Brush Creek	111364	0		Not Occupied
	Mendocino Coast	Garcia River	111370	15		High
	Mendocino Coast	North Fork Gualala River	111381	0		Not Occupied
	Mendocino Coast	Rockpile Creek	111382	0		Not Occupied
	Mendocino Coast	Buckeye Creek	111383	0		Not Occupied
	Mendocino Coast	Wheatfield Fork	111384	0		Not Occupied
	Mendocino Coast	Gualala	111385	0		Not Occupied
	Mendocino Coast	Russian Gulch	111390	0		Not Occupied
	Russian River	Guerneville	111411	12		High
	Russian River	Austin Creek	111412	4		Low
	Russian River	Laguna	111421	0		Not Occupied
	Russian River	Santa Rosa	111422	9		Low
	Russian River	Mark West	111423	11		Medium
	Russian River	Warm Springs	111424	12		High
	Russian River	Geyserville	111425	12		High
	Russian River	Sulphur Creek	111426	0		Not Occupied
	Russian River	Ukiah	111431	13		High
	Russian River	Forsythe Creek	111433	11		Medium
	Outside ESU	Lake Pillsbury	111163			High

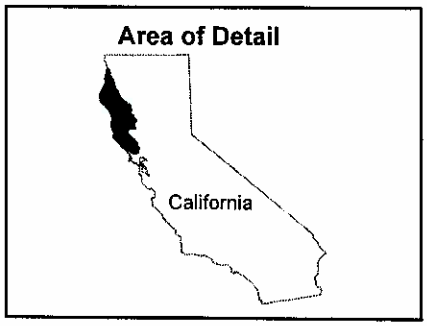
Figures A1 and A2: CALWATER Hydrologic Units and Hydrologic Subareas within the range of the California Coastal Chinook ESU

Map of the California Coastal O. tshawytscha ESU



Map of the California Coastal O. tshawytscha ESU





Subbasin Boundaries

State Boundary

Maps A1 through A8: California Coast Chinook ESU - Occupied Habitat Areas (Units) Considered for Critical Habitat Designation

A1 - Unit 1107 (Redwood Creek)

A2 - Unit 1108 (Trinidad)

A3 - Unit 1109 (Mad River)

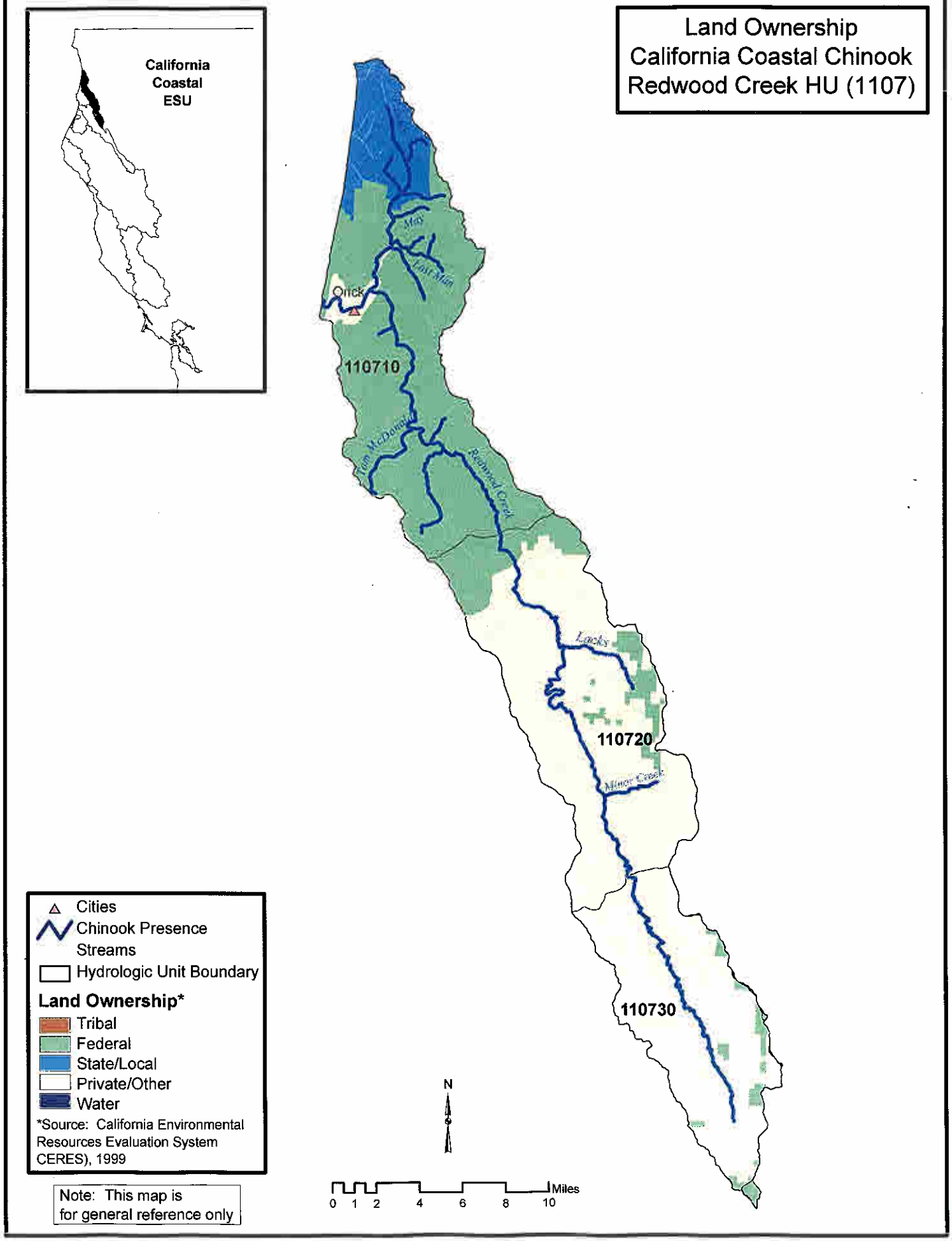
A4 - Unit 1110 (Eureka Plain)

A5 - Unit 1111 (Eel River)

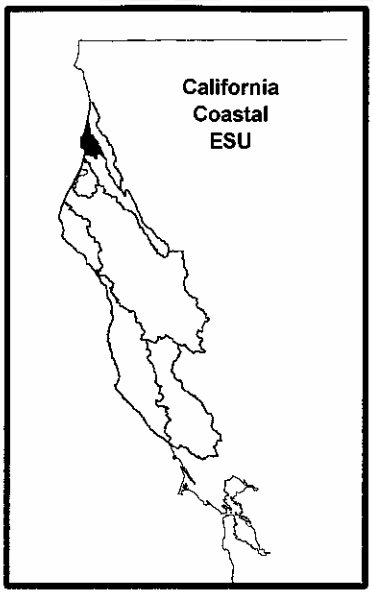
A6 - Unit 1112 (Cape Mendocino)

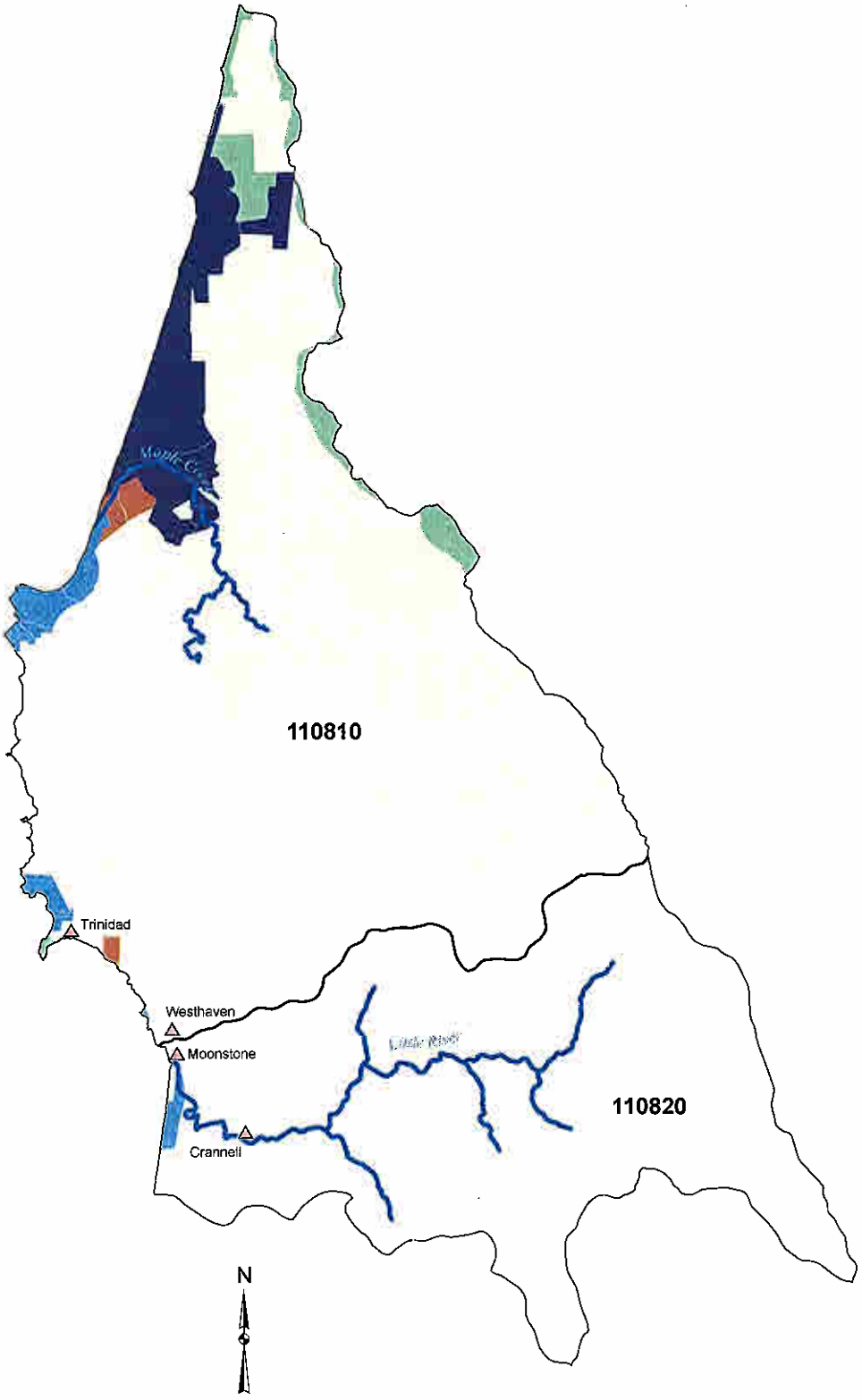
A7 - Unit 1113 (Mendocino Coast)

A8 - Unit 1114 (Russian River)


Land Ownership
California Coastal Chinook
Redwood Creek HU (1107)
California
Coastal
ESU
Orick
May
East Mill
110710
Tom McDonald
Redwood Creek
Lacks
110720
Minor Creek
110730
Cities
Chinook Presence
Streams
Hydrologic Unit Boundary
Land Ownership*
Tribal
Federal
State/Local
Private/Other
Water
*Source: California Environmental Resources Evaluation System CERES), 1999
Note: This map is for general reference only
N
0 1 2 4 6 8 10
Miles

Land Ownership
California Coastal Chinook
Trinidad HU (1108)



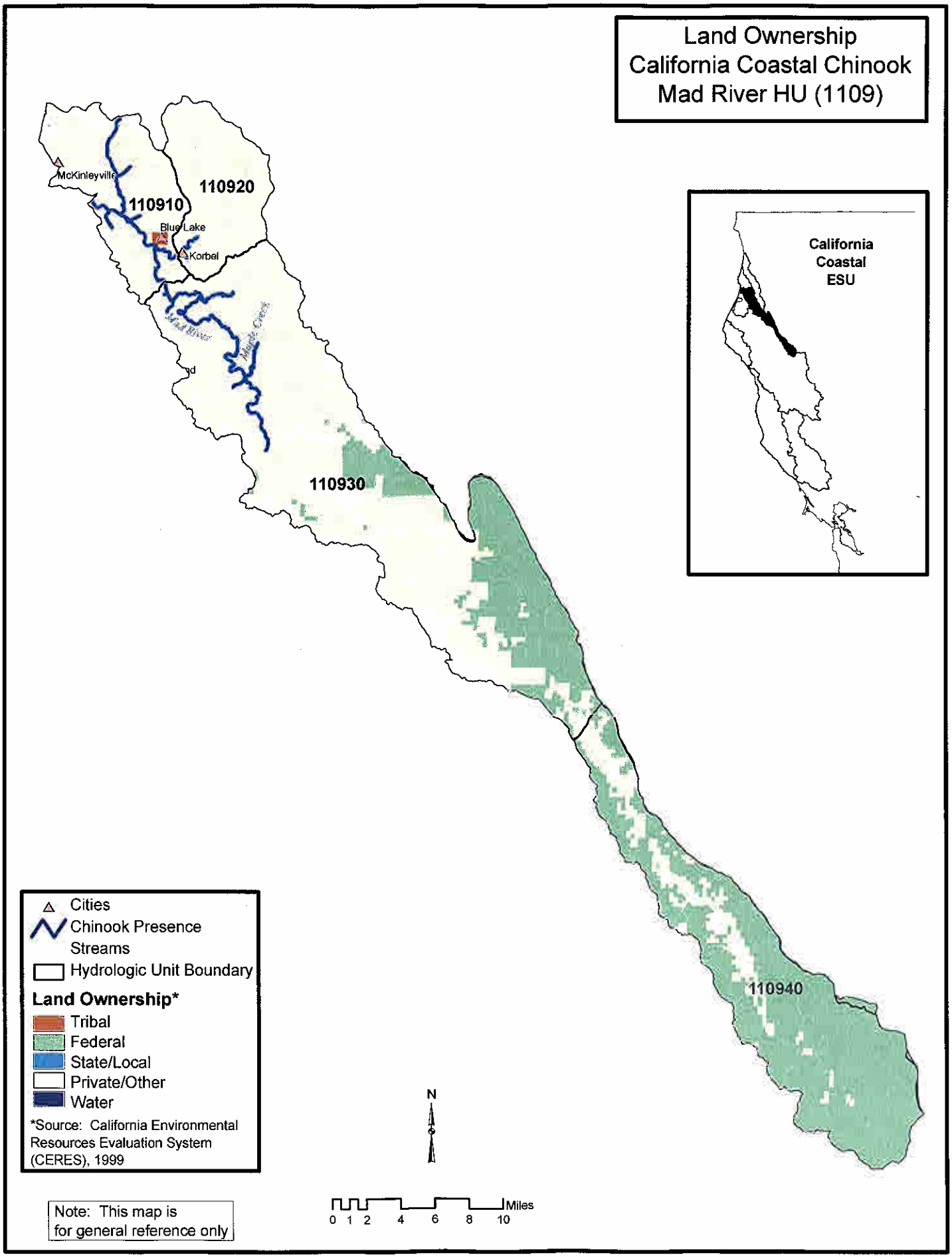


Cities
Chinook Presence Streams
Hydrologic Unit Boundary

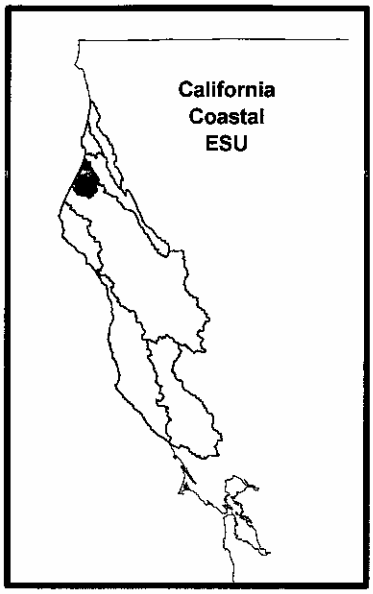
Land Ownership*
- Tribal
- Federal
- State/Local
- Private/Other
- Water

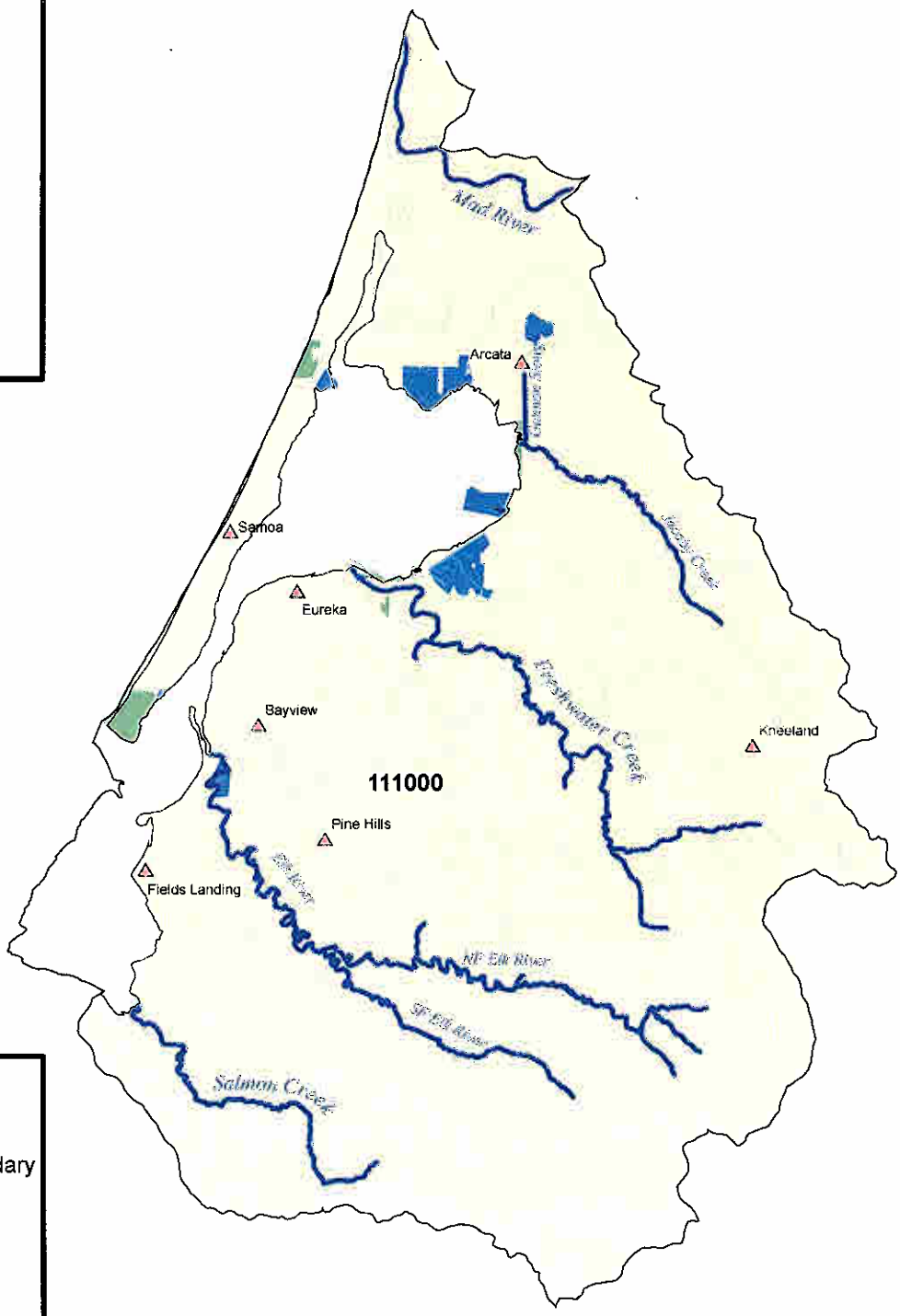
*Source: California Environmental Resources Evaluation System (CERES), 1999

Note: This map is for general reference only


Land Ownership
California Coastal Chinook
Mad River HU (1109)
McKinleyville
110920
110910
Blue Lake
Korbel
Mad River
Maple Creek
110930
110940
California
Coastal
ESU
Cities
Chinook Presence
Streams
Hydrologic Unit Boundary
Land Ownership*
Tribal
Federal
State/Local
Private/Other
Water
*Source: California Environmental Resources Evaluation System (CERES), 1999
N
0 1 2 4 6 8 10
Miles
Note: This map is for general reference only

Land Ownership
California Coastal Chinook
Eureka Plain HU (1110)





- Cities
- Chinook Presence Streams
- Hydrologic Unit Boundary

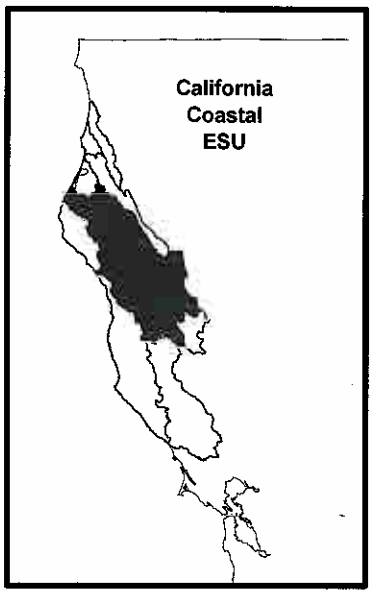
Land Ownership*

- Tribal
- Federal
- State/Local
- Private/Other
- Water

*Source: California Environmental Resources Evaluation System (CERES), 1999

Note: This map is for general reference only

Land Ownership
California Coastal Chinook
Eel River HU (1111)



Fortuna
Garberville
Covelo
Laytonville
Willits

111111
111121
111123
111112
111122
111113
111131
111141
111150
111174
111142
111132
111172
111133
111173
111171
111161
111162
111163
111163

Cities
Chinook Presence Streams
Hydrologic Unit Boundary

Land Ownership*

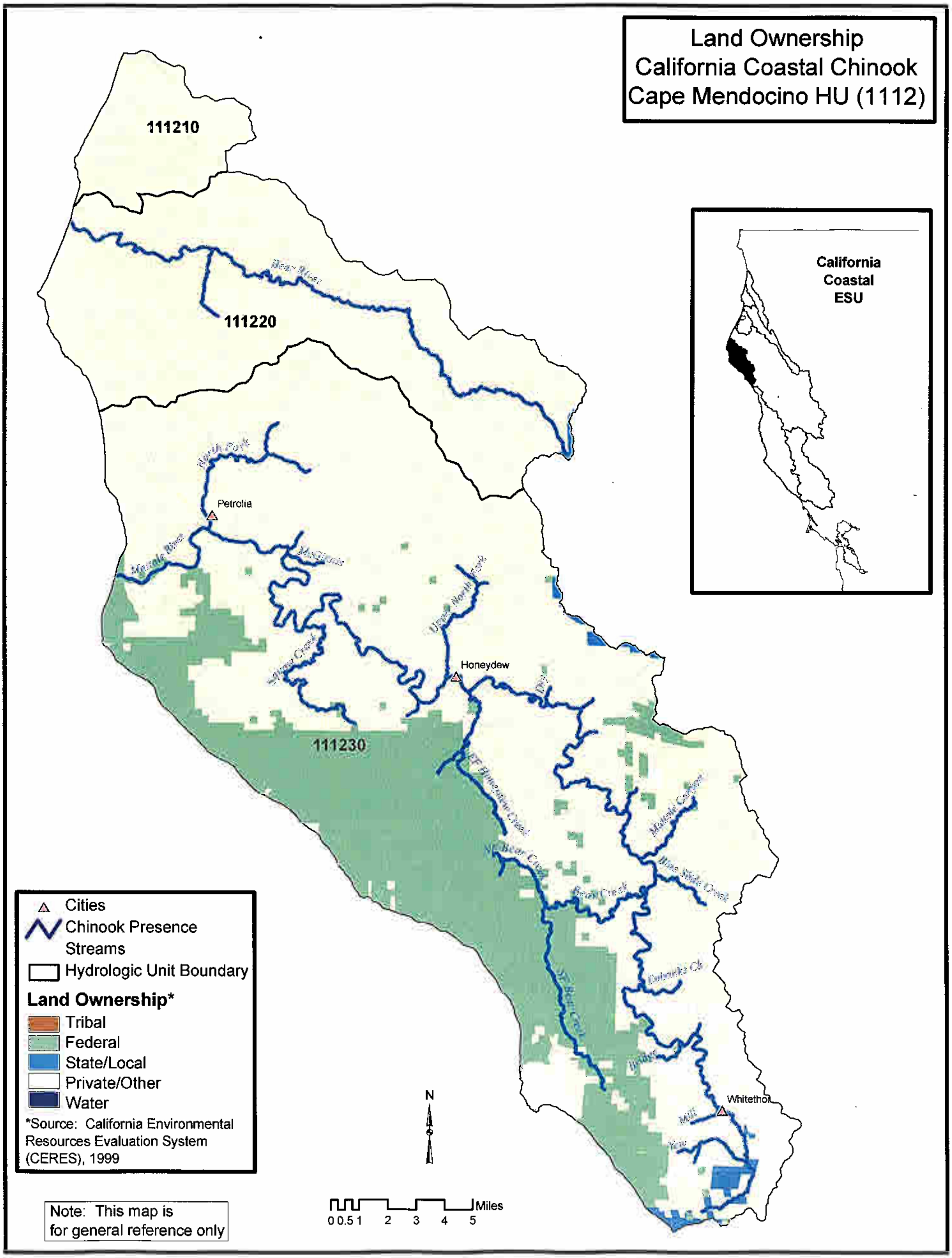
Tribal
Federal
State/Local
Private/Other
Water

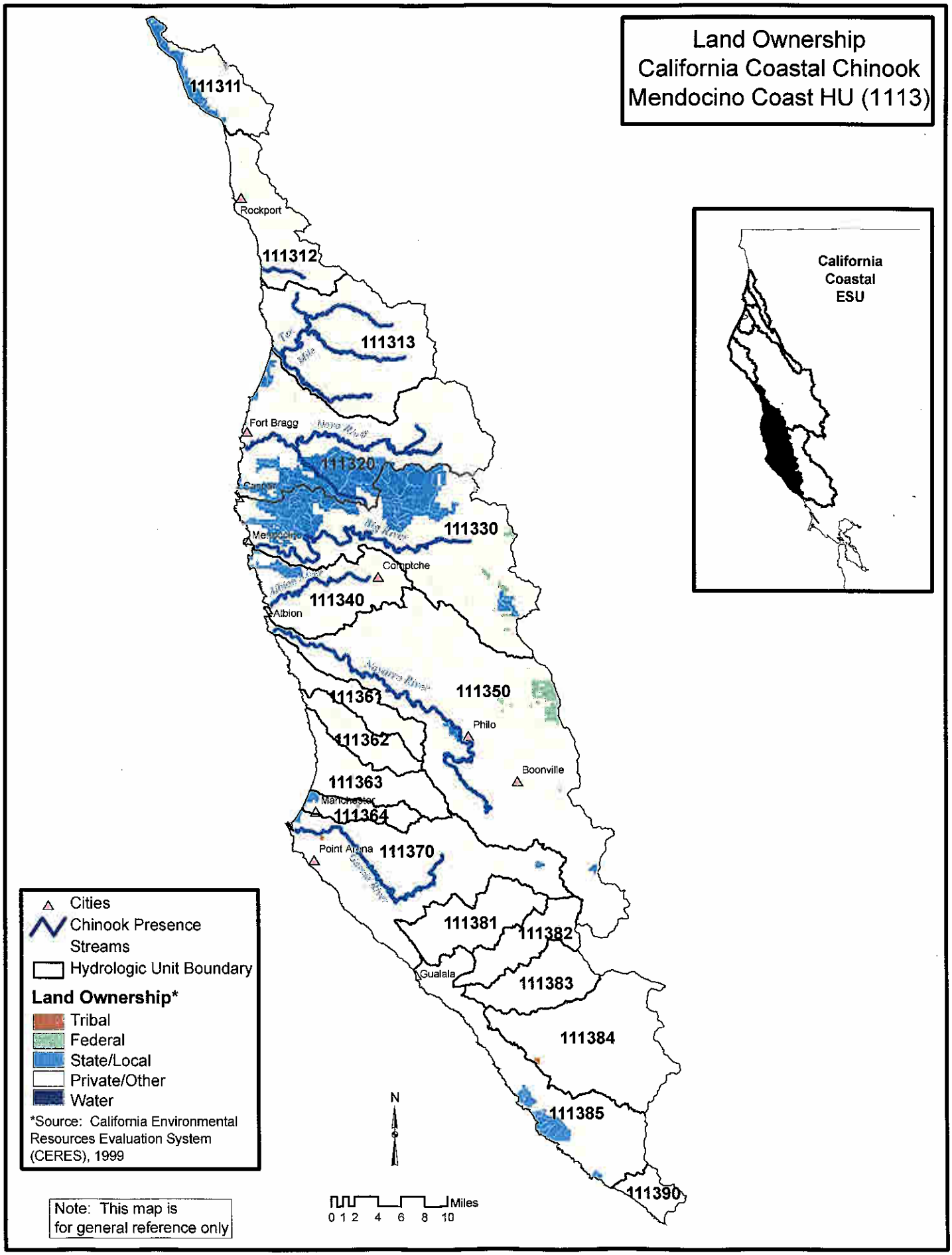
*Source: California Environmental Resources Evaluation System (CERES), 1999

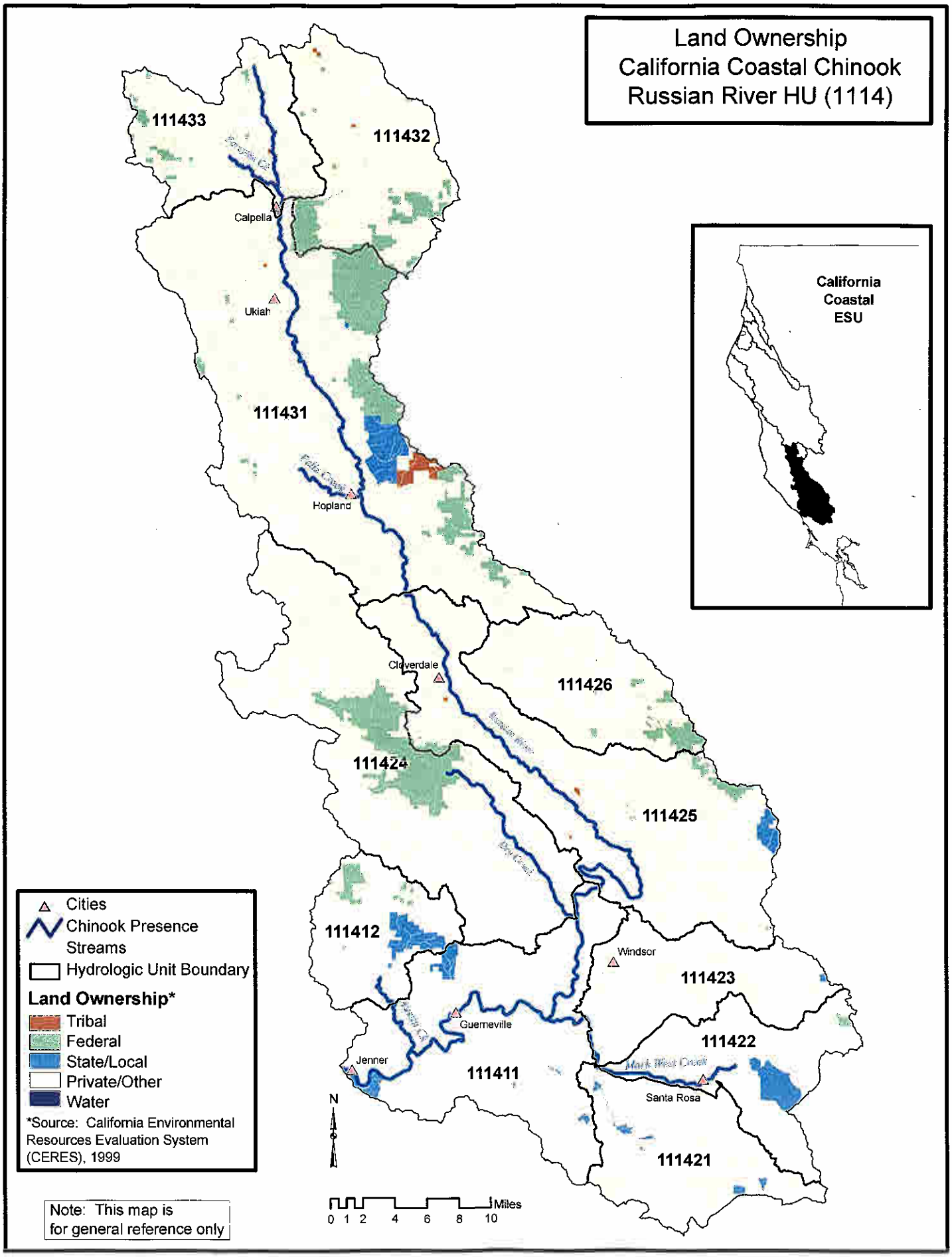
N

0 1 2 4 6 8 10 Miles

Note: This map is for general reference only


Land Ownership
California Coastal Chinook
Cape Mendocino HU (1112)
California
Coastal
ESU
111210
111220
111230
Bear River
North Fork
Petrolia
Mattole River
Honeydew
Whitethorn
Cities
Chinook Presence
Streams
Hydrologic Unit Boundary
Land Ownership*
Tribal
Federal
State/Local
Private/Other
Water
*Source: California Environmental
Resources Evaluation System
(CERES), 1999
N
0 0.5 1 2 3 4 5 Miles
Note: This map is
for general reference only


Land Ownership
California Coastal Chinook
Mendocino Coast HU (1113)
California
Coastal
ESU
111311
Rockport
111312
111313
Fort Bragg
111320
Mendocino
111330
Comptche
111340
Albion
111350
111361
Philo
111362
Boonville
111363
Manchester
111364
Point Arena
111370
111381
111382
Gualala
111383
111384
111385
111390
Cities
Chinook Presence Streams
Hydrologic Unit Boundary
Land Ownership*
Tribal
Federal
State/Local
Private/Other
Water
*Source: California Environmental Resources Evaluation System (CERES), 1999
N
Miles
0 1 2 4 6 8 10
Note: This map is for general reference only


Land Ownership
California Coastal Chinook
Russian River HU (1114)
111433
111432
111431
111426
111424
111425
111412
111423
111422
111411
111421
Calpella
Ukiah
Hopland
Cloverdale
Windsor
Guerneville
Jenner
Santa Rosa
California
Coastal
ESU
Cities
Chinook Presence
Streams
Hydrologic Unit Boundary
Land Ownership*
Tribal
Federal
State/Local
Private/Other
Water
*Source: California Environmental Resources Evaluation System (CERES), 1999
N
0 1 2 4 6 8 10
Miles
Note: This map is for general reference only

Map A9. Final CHART Conservation Value Ratings for CALWATER HSA Watersheds occupied by the California Coast Chinook ESU

California Coastal Chinook Watershed Conservation Rating

Map of the fifth- field watersheds occupied by the California Coastal Chinook Salmon Evolutionarily Significant Unit (ESU) and eligible for designation as critical habitat.